5 FAM 840 MANAGING SYSTEMS

5 FAM 841 GENERAL POLICY

(TL:IM-14;   12-30-94)

Whether a system is a mainframe or minicomputer, a network of PCs, an office of stand-alone PCs, or any combination of these, the system manager must establish procedures to perform certain routine functions, maintain the equipment, provide service to users, and keep the system and/or network functioning effectively and as efficiently as possible.

5 FAM 841.1 Backups

(TL:IM-14;   12-30-94)

a.   Regardless of the size of the system, system and data files must be backed up regularly (but at least once a week). It is the system manager's responsibility to:

(1)   Establish a set time for backups and not vary from the schedules.

(2)   Determine which files are to be backed up, when and how they are to be backed up.

(3)   Decide when to back up based on the local operation and environment.

(4)   Notify users of the backup schedules. It is recommended that users back up files on their own stand-alone PCs on an established schedule. The system manager will provide them with instructions on how to backup and a backup schedule.

b.   It is recommended that backup tapes or disks be stored in a safe place, preferably off-site whenever possible.

5 FAM 841.2 Anti-Virus Policy for Personal Computers

(TL:IM-14;   12-30-94)

a.   A computer virus program is one which can reproduce and damage other programs with copies of itself. Frequent, routine backups provide the best protection against mechanical disk failure and provide protection against damage done by computer viruses. Users of Department PCs are instructed to back up their systems on a regularly scheduled basis (at least weekly). Viruses are typically transmitted by being copied from floppy disks. A PC user may not copy data onto a hard disk if the source of the data is unknown or if it

is suspect in any way. It is recommended that managers purchase PC software that is "shrink wrapped" from a reputable computer dealer. Any other program, especially those on cheaply-labeled disks, is suspect as this is another way computer viruses are spread. It's best not to load anything from an alien disk. Never boot the system from an alien disk.

b.   It is recommended that users of PCs always keep a clean system diskette in reserve should a virus make the computer inoperable and/or unbootable from the hard drive. The operating system diskette(s) should have write-protect tabs in place before being used. This is to protect it from being infected by the virus while it is being used to boot the virus infected PC. Commercial anti-virus software is available and, when installed on the PC, may provide some protection. Contact Diplomatic Security (DS/IST/ACD) for detailed guidance on combating computer virus attacks.

5 FAM 841.3 Equipment Inventory

(TL:IM-14;   12-30-94)

The system manager (or unit supply officer) is responsible for entering ADP equipment into the Non-Expendable Property Application (NEPA) system. Bureaus may wish to centrally collect this information for tracking computing resources. When requested for this purpose, posts and offices should send the information on their equipment to their domestic bureau's requesting office and include a list of users, software installed, and databases kept, as well as the number of peripherals and type of central processing unit.

5 FAM 841.4 Commercial Off-the-Shelf Software

(TL:IM-14;   12-30-94)

a.   Commercial software is an asset like any piece of equipment for which a system manager is accountable. System managers must maintain a record of every copy of commercial software installed on the PCs for which they are responsible. After installing and testing a commercial product, the system manager should record the following essential information:

(1)   Title;

(2)   Version;

(3)   Type of license and registration numbers;

(4)   To whom issued (name of user or on which PC installed); and

(5)   Titles of accompanying documentation and where filed.

b.   The system manager must fill in and mail vendor registration cards. When a system manager or PC user receives updated versions of commercial products, they should follow the same procedures. Also, they should format and make available for re-use (or dispose of per license agreement) the old version's diskettes or tapes, and dispose of the old documentation.

c.   System managers and users of PCs may not install, use, or reproduce unauthorized or illegally obtained software. They may not reproduce copyrighted software without the vendor's written authorization. Compliance with vendor registration procedures and copyright protections is required.

5 FAM 841.5 Domestic Maintenance Policy

(TL:IM-14;   12-30-94)

a.   Participating domestic bureaus and offices may obtain maintenance support of their ADP equipment and software through A/IM's Self-Maintenance Program. The Domestic Maintenance and Installations Division (A/IM/SO/TO/DMI) administers the program. Any office or bureau wishing to participate in the program should contact the division chief at (202) 647-7500 to negotiate a memorandum of understanding and arrange to transfer the necessary funds.

b.   Services provided through the program include corrective hardware maintenance, preventive maintenance, installation and relocation services for Wang and other manufacturer's automated data processing/office automation equipment within the Washington, D.C. area. These services are available from 7:30 a.m. to 4:30 p.m., Monday through Friday, excluding government holidays. Emergency service outside these hours is available (see 5 FAM 841.5.1).

c.   The local system manager serves as the contact point for all maintenance requests. The system manager should analyze problems to decide if they can be resolved locally or if a technician is required. The system manager can request service by calling the ADPE service desk at (202) 736-4700 or by faxing the information to (202) 647-7621. An ADPE service coordinator will receive maintenance requests and dispatch technicians. Information needed on the service request is shown in 5 FAM 841 Exhibit 841.5 .

5 FAM 841.5-1 Emergency After Hours Service

(TL:IM-14;   12-30-94)

Emergency service calls outside business hours are automatically forwarded to the FADPC help desk. They, in turn, will contact the ADPE duty person. The caller must furnish the following information:

(1)   Model number, serial number, and bar code number of the failed piece of equipment;

(2)   Organization code or function code to which the service costs will be applied;

(3)   Office symbol;

(4)   Description of problem;

(5)   Location of equipment;

(6)   Contact person's name and telephone number. The ADPE duty person will contact the individual requesting the service to confirm after hours service is necessary and a service technician will be dispatched. The caller will be notified as to when the technician may be expected.

5 FAM 841.5-2 Warranty Service

(TL:IM-14;   12-30-94)

Wang provides warranty service for equipment purchased through them. System managers are responsible for tracking the warranty of their equipment and placing requests for service during this period. To request warranty service from Wang call 1-800-247-WANG.

5 FAM 841.5-3 Software Support

(TL:IM-14;   12-30-94)

A/IM's Help Desk is available to assist the program's customers with questions concerning industry standard PCs and some commercially available software. The help desk hours are 0700-1800. The telephone numbers are (202) 647-8833 and (202) 647-7760; fax: (220) 736-7441. Callers outside business hours are directed by an audix message to either contact the FADPC help desk for FAIS related questions or are asked to leave a message and the call will be handled during normal business hours. Users can also access the help desk via e-mail through the FAIS and DOSNET systems (the e-mail address is: "FAIS HELP DESK"). Software support is also

available through Wang's GSA schedule on a per-incident fee basis. It can be obtained by calling 1-800-247-WANG. A funded purchase order is required.

5 FAM 841.6 Overseas Maintenance Policy

(TL:IM-14;   12-30-94)

Wang Equipment. Managers can use the existing Wang contract to purchase parts and maintenance for Wang systems. They should contact ADPE Contract Administration (A/IM/SO/TO/PIF/ADP) for assistance
(see 5 FAM 817 Exhibit 817 for telephone number).

5 FAM 842 SYSTEM MANAGEMENT ACTIVITIES

(TL:IM-14;   12-30-94)

System managers must prepare standard operation procedures which outline daily, weekly, monthly, quarterly, annual, and special procedures for managing the systems for which they are responsible.

5 FAM 842.1 Assigning New Users to the System

(TL:IM-14;   12-30-94)

Depending on the type of system, there are a few things for system managers to do when adding new users to a system:

(1)   If there is a security option on the system, assign logon IDs to the users. At post, contact the Information System Security Officer (ISSO) to conduct a security briefing of new users prior to allowing system access.

(2)   Brief the users on what program and data files and what document libraries to use. Show them how to handle the equipment. If there are self-teaching courses for software available, give the users the opportunity to use them.

(3)   Brief all new users on when and whom to call for assistance. Instruct them on what they may and may not do to their equipment.

(4)   Ensure that the system manager is a stop on the post checkout sheet to ensure proper disposition of a departing user's IDs, files, and documents.

5 FAM 842.2 Equipment Care

(TL:IM-14;   12-30-94)

System managers should establish general instructions concerning the care and use of workstations and printers, ensuring effective performance of equipment, diagnosing problems, and setting up guidelines for programmers.

(1)   Teach users how to turn equipment on and off and how to log onto the system.

(2)   Warn users about placing workstations and printers close to sources of severe pollution, such as dry copiers. Particles from these sources are pulled into the device by the ventilation fan and can damage equipment.

(3)   Inform users of the possible hazards of smoking, eating, and drinking around the equipment. Do not allow smoking in a computer room.

(4)   Tell users not to pull or pinch cables connected to their equipment. This can cause the signal-carrying part of the cable to break.

(5)   Show users who have printers how to change wheels, ribbons, ink cartridges, paper, etc.

(6)   Clean diskette drives in PCs periodically. Cleaningkits are commercially available.

(7)   Establish rules for:

(a)   Cleaning the read-write heads on the tape drive;

(b)   Cleaning printers;

(c)   Maintaining special air or power conditioning equipment that might be installed;

(d)   Teaching other users to care for equipment and diskettes; and

(e)   For Wang systems only, performing no maintenance or repairs other than those approved by the customer engineer.

(8)   Instructions on caring for the equipment are found in the manuals that accompany the equipment. Other information may be found in the system administration and user manuals.

5 FAM 842.3 Activity Log

(TL:IM-14;   12-30-94)

For managers of mainframe systems, Wang VS systems and all LAN network systems, keep a daily log of all activities on your system. This log is useful in diagnosing problems and provides a record of what has been done over a particular period of time. The log should include:

(1)   When backups were done and what was backed up;

(2)   Equipment failures;

(3)   Calls to the CE;

(4)   Visits by the CE;

(5)   When new hardware and software were installed;

(6)   System crashes or network problems; and

(7)   The date, time, and initials of the person making the entry.

5 FAM 842.4 Daily Procedures

(TL:IM-14;   12-30-94)

a.   Exact procedures to follow for starting the day will vary for each installation. All procedures, however, will include powering up the system (and IPLing if it is a Wang VS system), and turning on PCs and peripheral equipment. In those cases where air and power conditioning is not left on 24 hours a day, include starting them as part of the daily routine. Start telecommunications and network tasks. Make the system available to users.

b.   The end-of-day procedure involves reversing the steps performed in the start-of-day procedures as well as running day-end and periodic batch jobs such as transaction log closeouts and file purges. The system manager should decide early on about keeping the air conditioning on 24 hours a day, and ensuring that the policy is known and followed.

5 FAM 842.5 Backups

(TL:IM-14;   12-30-94)

a.   Files to be backed up daily will probably be the data files and the document libraries. In some installations, these files will be grouped together on the same disks. Therefore, in a simple schedule, these disks might be backed up completely each day. The operating system and executable programs will reside on other disks and will be backed up less frequently. However, if an installation suffers frequent downtime or power problems, the system manager may want to back up the entire system each day.

b.   Provide storage space for the backups that is cool, clean, and dry. The amount of storage needed depends on the number of backups stored and the medium used. Store at least three generations (or cycles) of backups. Off-site storage is recommended for one generation of backups if possible. The actual number of generations the system manager decides to store will depend on how often a file or document has to be restored from a backup. If it is necessary to frequently restore files and documents, especially old ones, keep backups for a longer time.

5 FAM 842.6 Spare Parts Inventory

(TL:IM-14;   12-30-94)

a.   At least once a year the system manager should reconcile the recorded inventory to the physical inventory (i.e., the spare parts on hand). Any difference between the number of parts on hand and that in the records must be resolved. If parts are missing that cannot be accounted for, accountability should be assigned and the controls strengthened to reduce further exposure to loss.

b.   The system manager will keep a copy of the inventory. For Wang systems only, the inventory of parts should be separated by ownership, i.e., government owned parts and those owned by Wang, and a copy provided the Wang customer engineer.

5 FAM 842.7 Tape and Disk Inventory

(TL:IM-14;   12-30-94)

At least once a year, the system manager should inventory all tapes and disks on hand to ensure that there is an adequate supply to meet operational needs, especially for backups. To make this chore easier, do the following:

(1)   Keep a list of all tapes and disks. On this list, note the disks and tapes that have been taken out of service, mailed, or loaned out.

(2)   Provide a central storage area for tapes and disks and mark each tape and disk with its contents.

(3)   During the inventory, reconcile the list with what is actually found. This is a good time to retire unreliable tapes. NOTE: When disposing of media, follow the security procedures as defined by DS/CIS/IST. Damaged media still contains usable information. Refer to 12 FAM for details.

5 FAM 843 IDENTIFYING PROBLEMS

(TL:IM-14;   12-30-94)

A system manager's ability to identify and solve problems will improve with time and practice. The following will help in solving problems.

(1)   Learn everything possible about the system before something goes wrong. Become familiar with the manuals for the system and with various equipment status lights, messages, and other indicators. Ask the vendor if there are other manuals you should have.

(2)   When a problem occurs, collect all the information you can about it before attempting to solve it. Look at the hardware status indicators, what the users were doing on the system and the environment (electricity and air conditioning).

(3)   If the system manuals have a procedure for recovering from a particular problem, follow it.

(4)   When the problem is solved, enter it in the system log book. Note all the symptoms of the problem, what information was gathered from the system, and what was done to correct the problem. If a Wang CE was called to assist, note that also, together with the date and time.

5 FAM 843.1 Handling Calls from Users

(TL:IM-14;   12-30-94)

The following are considerations for the system manager:

(1)   Users report the most common problems. These may involve hardware or software failure or may just be questions.

(2)   The easiest way to avoid unnecessary questions is to educate users. A call about a printer not working can be prevented by teaching the users how to put paper, ribbon, daisy wheels and toner in correctly. All users should go through word processing self-teaching courses. They should also be familiar with all applications they use.

(3)   Establish a list of questions to ask users who call to report problems. This list might include the following:

(a)   User's name, room number, and telephone number.

(b)   Workstation or printer number.

(c)   Date and time of the call.

(d)   An exact description of the problem, including what the user was trying to do when it happened. If the problem involves a message or an abend (abnormal end) screen is displayed, have the user print the screen.

(e)   If the problem involves one of the applications distributed by A/IM, determine if the problem interferes with user performance. If it does, notify A/IM/PD/AT/SYS/NS immediately by cable or telephone. If not, add it to the reporting requirements section of the quarterly report.

5 FAM 843.2 Handling Errors on System Start-up

(TL:IM-14;   12-30-94)

a.   If the system fails on start-up, there are a few things you should check before calling for help.

b.   Status displays on the processor or the keyboard of a PC will frequently indicate the nature of the problem. The system administration manuals from the vendor should tell you what these status displays mean, what they should show under normal operating conditions, and what to do when they are different.

c.   Sometimes a start-up error message may appear on the console or PC monitor. Again the system administration manuals should tell you what these messages mean and what you can do.

d.   Be sure the system has been correctly and completely powered up.

e.   Be sure the disk or diskette drive from which you are bringing up the system has the disk or diskette properly loaded. If you want to start a PC from the hard disk, be sure there is no diskette in drive A. If there is, the PC will try to load from that.

f.   If you still have difficulties, call the help desk number listed in 5 FAM 817 Exhibit 817 or other known source of assistance.

5 FAM 843.3 Handling Power Failures and Fluctuations

(TL:IM-14;   12-30-94)

a.   Computers require a supply of steady power—If fluctuations occur, the system may crash or files and documents may be damaged. If power is completely lost, the system will crash.

b.   **System Failure Due to a Power Fluctuation**—If power is out for a while, turn off the CPU and external disk or tape drives. This protects the computer from sudden surges when the power starts.

(1)   If the computer is connected to a power conditioner or an UPS, the UPS will usually need to be re-started, or at least re-transferred back on-line, if it has failed during a power outage. This should be done with all the computer loads turned off.

(2)   Once power is stable, the system manager can power up the computer. Before letting the users onto the system, check the disks for errors and recover them. If telecommunications or network tasks are running, start these to be sure they execute correctly. Sometimes these tasks require reinitializing (purging) the log files they keep.

(3)   Once the disks are recovered, allow users onto the system. Some of them may have been editing documents when the power problem occurred. If so, these documents may be damaged and require recovery.

(4)   Sometimes, when there is a power surge rather than a power loss, the system will not stay up. This may be due to hardware damage. If it is a Wang system, call the customer engineer and leave the system down until the customer engineer has had a chance to look at it.

(5)   Log the power loss, noting the length of downtime and what was damaged.

c.   **Power Problem on a Single Workstation**—If the workstation loses power for a few moments, it will start where it left off. If a word processing document was being edited, it may be damaged and require recovery. If telecommunications was being used, the telecommunications log may require recovery. If the user was updating a data file, the file or the disk on which it resides may have to be recovered.

(1)   If the workstation loses power for an extended period of time, turn it off to protect it from a surge when the power returns. Remember the user will still be on the system. When the workstation is restarted it will continue whatever it was doing when power was lost unless an IPL has been done. Check all documents, files, or disks the user was accessing at the time the workstation was lost. They might have to be recovered. System managers at overseas posts should ask for help from the RIMC in this process and, if no straightforward solution is identified or if the problem is system-wide or chronic, A/FBO/PE/BDE/EEB should be contacted for further technical assistance.

(2)   If there was a power surge, the workstation may not start after power is restored to normal. This may be due to a burned fuse. The fuse is usually located in the back of the workstation. If the fuse is burned, replace it. Use the same kind of fuse as is in the workstation. Do not substitute another type. If the workstation still will not start, leave it off and call the CE if it is part of a Wang system, or get help from your usual source.

d.   **Chronic Fluctuations**—Frequent power problems can cripple an operation. The only defense is power conditioning. This equipment is designed to absorb, as much as possible, the power fluctuations. Selection of a conditioner is based on the needs of the system and the severity of the problem.

5 FAM 843.4 Handling System Crashes

(TL:IM-14;   12-30-94)

a.   System crashes are caused by a number of events. One of these, power fluctuations, was discussed above. Others include disk head crashes, memory errors and certain software problems.

b.   When a system crashes for a reason other than power, one or more status lights will be lit and/or a message will be displayed on the system console or one of the workstations. The system manager should note these carefully in the log before trying to restart the system. If a disk has suffered a head crash (easily identified by the noise coming from the disk drive), turn it off and call your normal source of help. Before re-initializing the system, the system manager should do the following:

(1)   Tell the users to stay off the system until you tell them they can use it;

(2)   Verify the disk packs;

(3)   Recover damaged disks and restore damaged files from backup copies;

(4)   When the system is stable, let the users onto it. If the system will not stay up, leave it down and call the Wang CE (if it is a Wang system) or your normal source of help;

(5)   If you have access to a hotline telephone number, use it.

5 FAM 843.5 Handling Telecommunications Line Problems

(TL:IM-14;   12-30-94)

a.   System managers should follow the procedures listed below when posts experience problems with the IM-developed 3270 Telecommunications Application to maximize diagnostic efficiency and minimize computer downtime. Circuit outages and computer problems must be approached in a systematic manner, therefore, it is imperative to create logs to track progress and to identify contacts.

b. **Scheduled Outages**—The FADPC Help Desk, A/IM/SO/DO/CC/BCC, and the Information Processing Unit (IPU) must advise all users in advance of planned circuit outages, including crypto changes (HJ), and the reasons for the planned outage. Perform HJ whenever possible before user operations begin. A/IM/SO/DO/CC/BCC and the IPU must advise all customers when the circuit is restored. Tail segment users must advise their respective headquarters or field post of scheduled downtime, the reason for the downtime, and system restoration.

c. **Unscheduled Outages**—The IPU and A/IM/SO/DO/CC/BCC must advise all users immediately of all unscheduled circuit outages and the reasons for the outages, if known at that time. A/IM/SO/DO/FADPC notifies A/IM/SO/DO/CC/BCC of lengthy (more than 30 minutes) Orange system downtime. A/IM/SO/DO/CC/BCC will advise via service message all affected IPO's who in turn must relay the downtime messages to the posts system managers. A/IM/SO/DO/CC/BCC and the IPU must advise the users when the circuit is restored. Tail segment users must advise their respective headquarters or field post immediately of unscheduled downtime and system restoration.

d. **Hours and Access**—The IPU must have 24-hour access to the IM Wang computer room for modem and line testing. Operating hours that include scheduled downtime (if downtime occurs on a regular basis) must be established by all users. FADPC and IM/SO/DO/CC/BCC must be notified of these hours.

e. **FADPC Announcements of TC Outages**—System managers should periodically review library TCSYSMSG on IPL Volume for new entries and list the status of files to be received if post TC is configured for file transfer. This checks for messages with application/sender codes of 00, 01, 02. These messages can often contain important information regarding scheduled Orange system downtimes and other items that may impact telecommunications.

5 FAM 844 GETTING HELP

(TL:IM-14;   12-30-94)

a. When a system manager has exhausted local resources in troubleshooting a problem, the following are other sources of help:

b. PC vendors usually supply an information hotline to help with the more difficult problems. Before calling these numbers, do all you can to solve the problem. When you call, have on hand the model number of your PC, a list of the cards it contains and the software (including revision level) that it is executing. The Wang customer engineer is another resource for information.

c.   Exhibit 817 contains a list of help desks which support various applications, systems, and geographic regions.

d.   If you still cannot solve the problem, cable your supporting office or agency. The people in these offices have sources they can query on your behalf. Be sure the cable completely describes the symptoms, together with status displays and messages from the system. Also include a list of the software running on the system and the revision levels.

5 FAM 845 THROUGH 849 UNASSIGNED

5 FAM 841 Exhibit 841.5

INFORMATION FOR SERVICE REQUEST

REQUEST FOR SERVICE MAY BE FAXED TO:
(202) 736-7621

Model No: _____   Serial No: _____   Bar code No. _____

Bureau _____   Office Symbol: _____   Phone No: _____

Point of Contact/User's Name: _____

System Manager's Name: _____

Function/Org. Code Number: _____

Equipment Type (please check all that apply): _____

Core Equipment: _____   Non-Core Equipment: _____

Tempest Equipment: _____   Non-Tempest Equipment: _____

Description of Problem: